

Fig.1
PRIOR ART

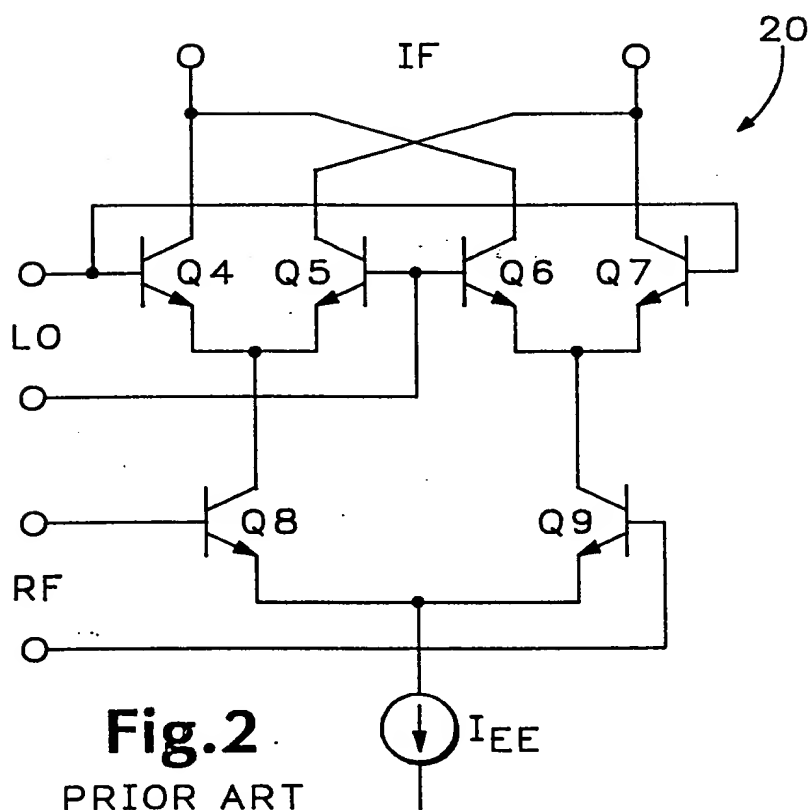
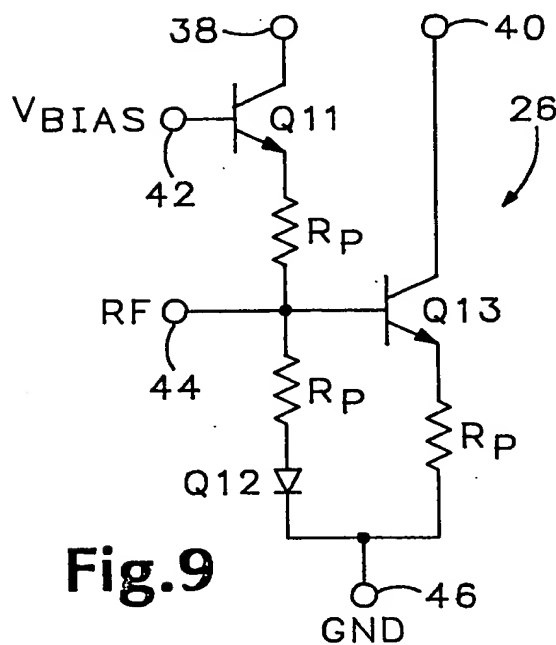
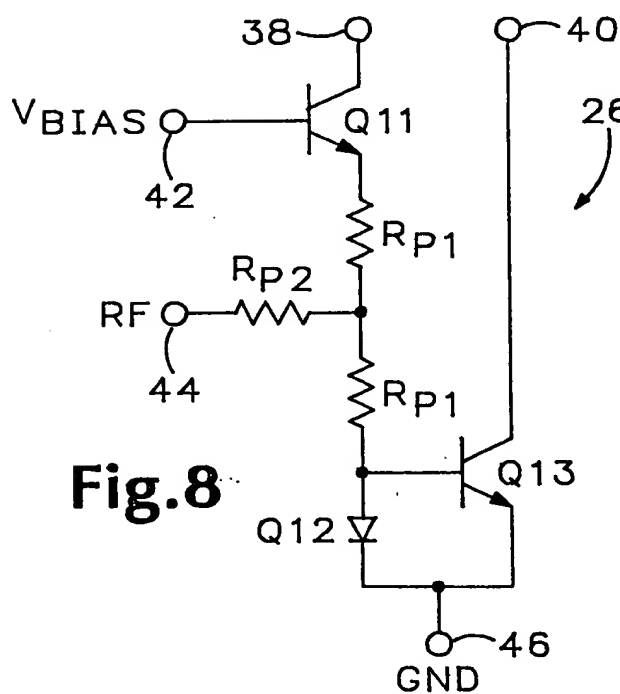
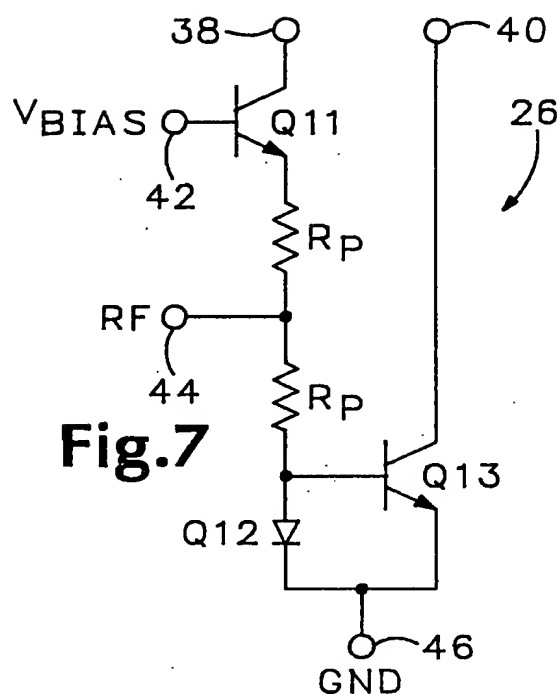
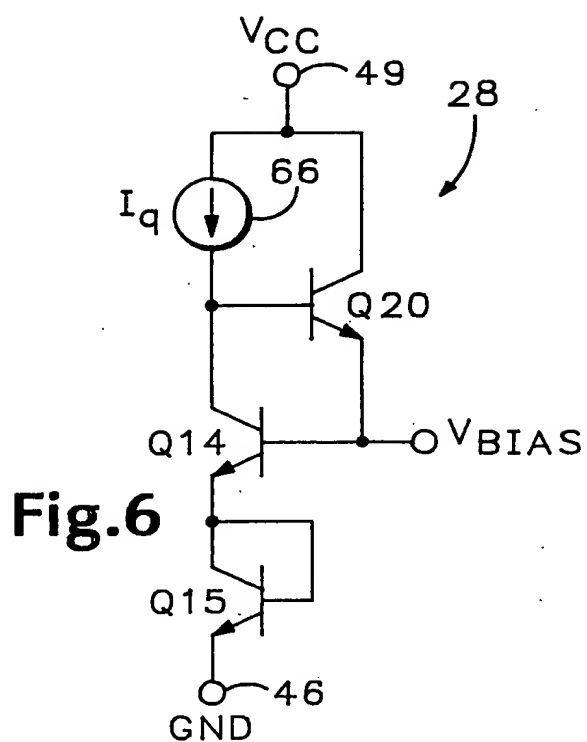


Fig.2.
PRIOR ART

Fi.3

The circuit diagram, labeled Fig. 4, shows a differential amplifier. The input stage consists of two NPN transistors, Q20 and Q21, connected in a differential pair. Their emitters are tied together and connected to ground (GND) through a resistor labeled R_{BIAS} and a capacitor labeled C_F . The base of Q20 is connected to ground (GND). The base of Q21 is connected to the emitter of Q20. The collector of Q20 is connected to a supply voltage V_{CC} through a resistor $R1$. The collector of Q21 is connected to V_{CC} through a resistor $R2$. The output of the differential pair is taken from the collector of Q21, which is also connected to the non-inverting input (labeled 62) of an operational amplifier (labeled A). The inverting input (labeled 64) of the op-amp is connected to the collector of Q20. The op-amp is configured as a voltage follower, with its output (labeled 42) connected to its non-inverting input. The output of the op-amp is also connected to a resistor $R3$, which is connected to ground (GND). The circuit is powered by V_{CC} and GND. Various components are labeled with reference numerals: 49 for V_{CC} , 46 for GND, 58 for the collector of Q20, 60 for the collector of Q21, 54 for the op-amp, 56 for the output node, 52 for the input node, 28 for the op-amp, 42 for the op-amp output, 44 for the output node, 62 for the non-inverting input, 64 for the inverting input, 50 for the op-amp, 51 for the op-amp, 53 for the op-amp, 55 for the op-amp, 57 for the op-amp, 59 for the op-amp, 61 for the op-amp, 63 for the op-amp, 65 for the op-amp, 66 for the op-amp, 67 for the op-amp, 68 for the op-amp, 69 for the op-amp, 70 for the op-amp, 71 for the op-amp, 72 for the op-amp, 73 for the op-amp, 74 for the op-amp, 75 for the op-amp, 76 for the op-amp, 77 for the op-amp, 78 for the op-amp, 79 for the op-amp, 80 for the op-amp, 81 for the op-amp, 82 for the op-amp, 83 for the op-amp, 84 for the op-amp, 85 for the op-amp, 86 for the op-amp, 87 for the op-amp, 88 for the op-amp, 89 for the op-amp, 90 for the op-amp, 91 for the op-amp, 92 for the op-amp, 93 for the op-amp, 94 for the op-amp, 95 for the op-amp, 96 for the op-amp, 97 for the op-amp, 98 for the op-amp, 99 for the op-amp, 100 for the op-amp.

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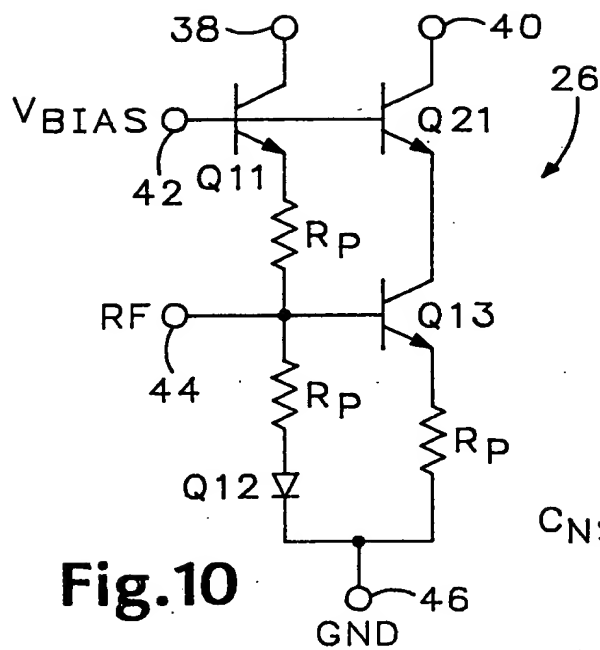


Fig.10

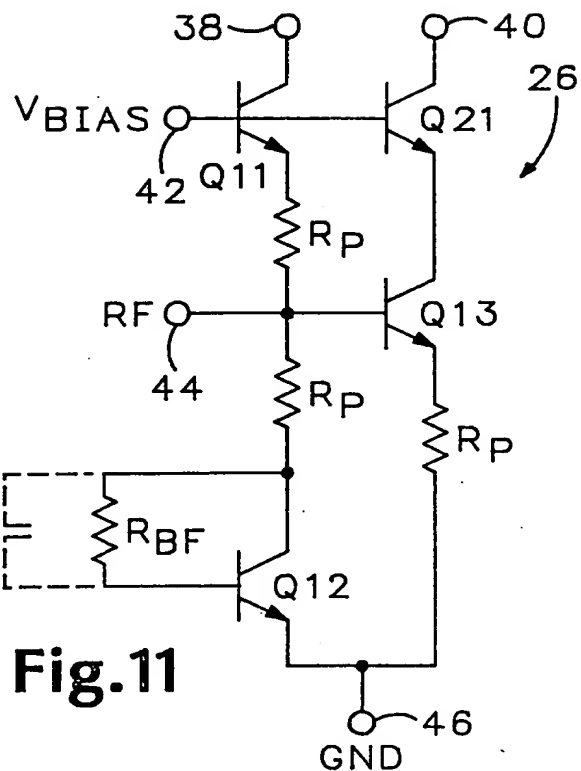


Fig.11

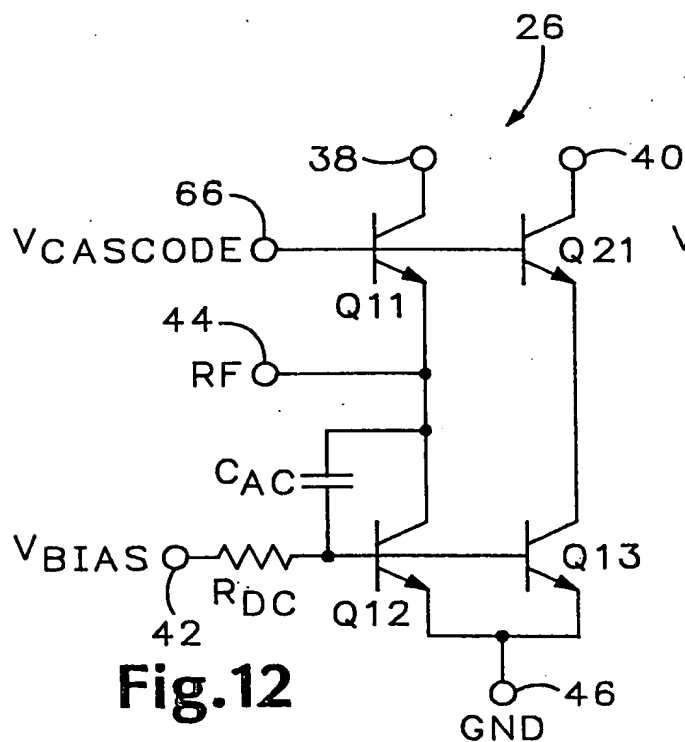


Fig.12

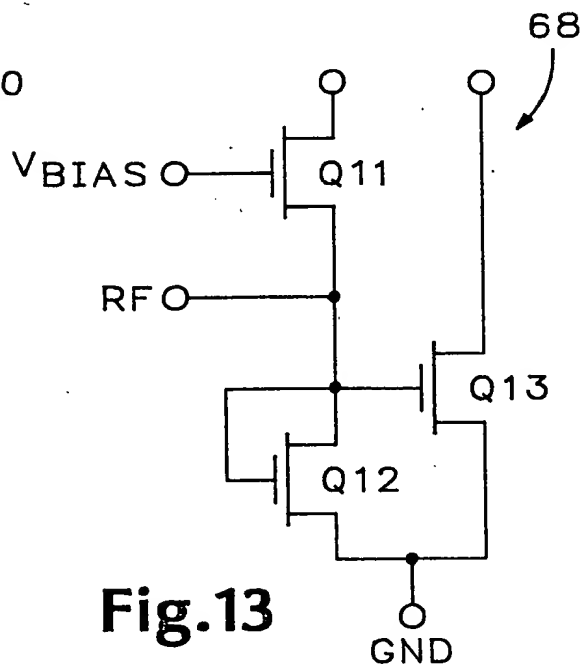


Fig.13

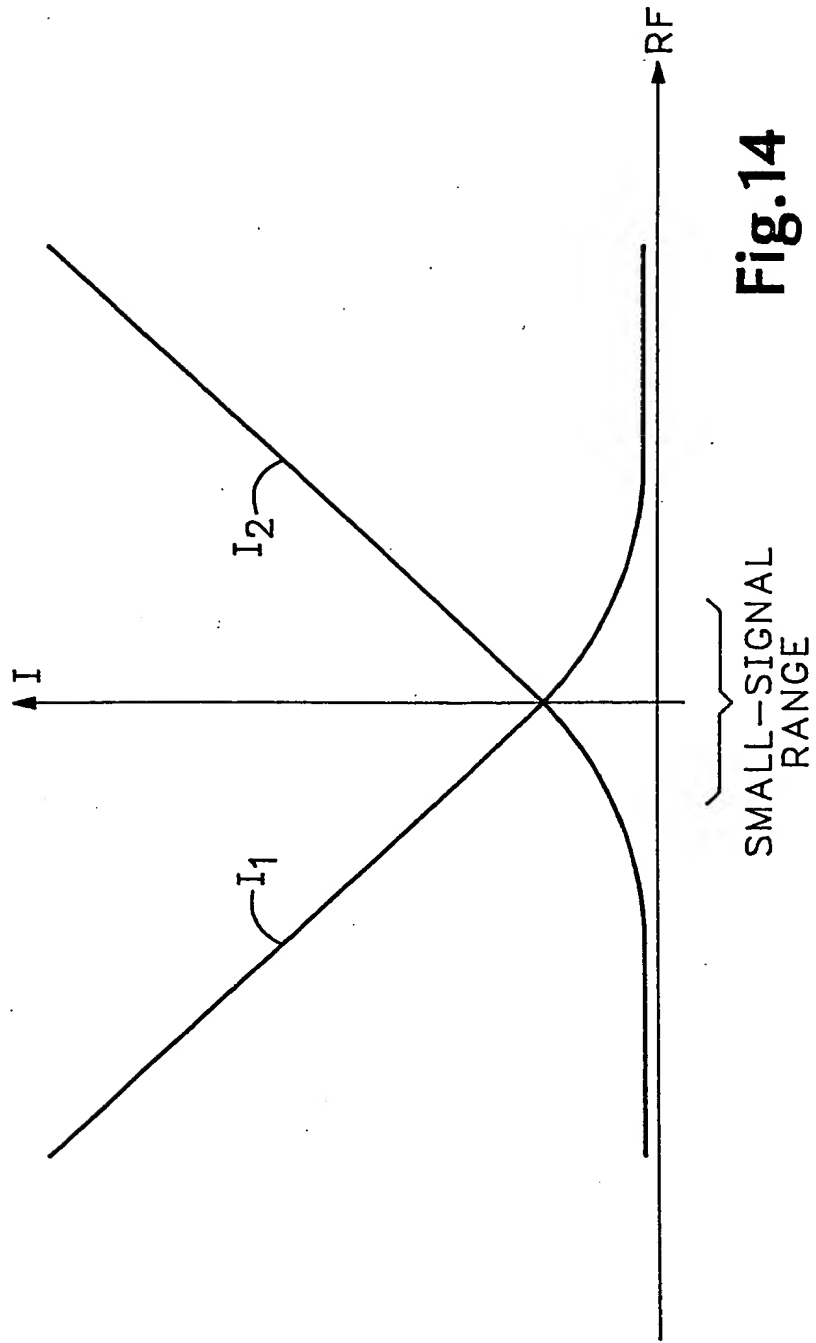


Fig.14

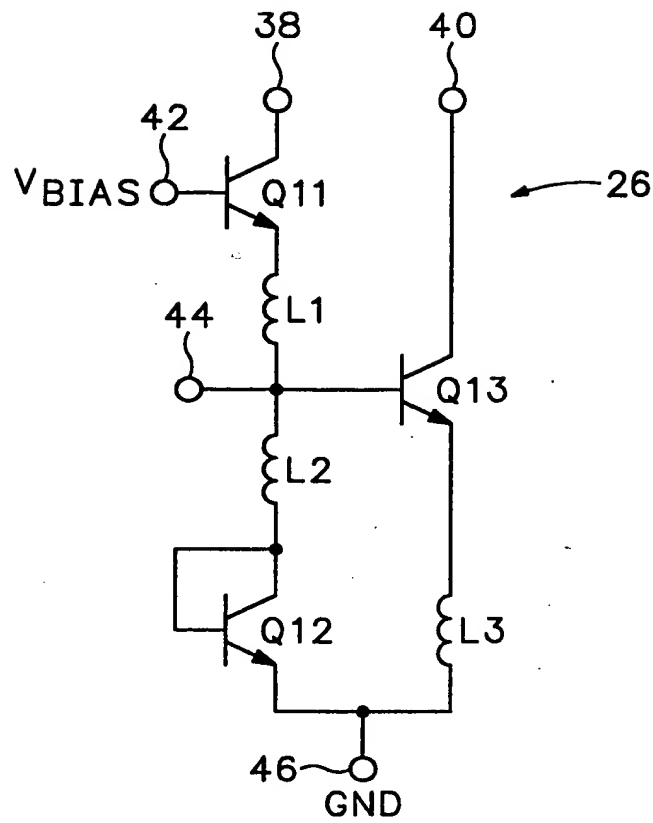


FIG.15

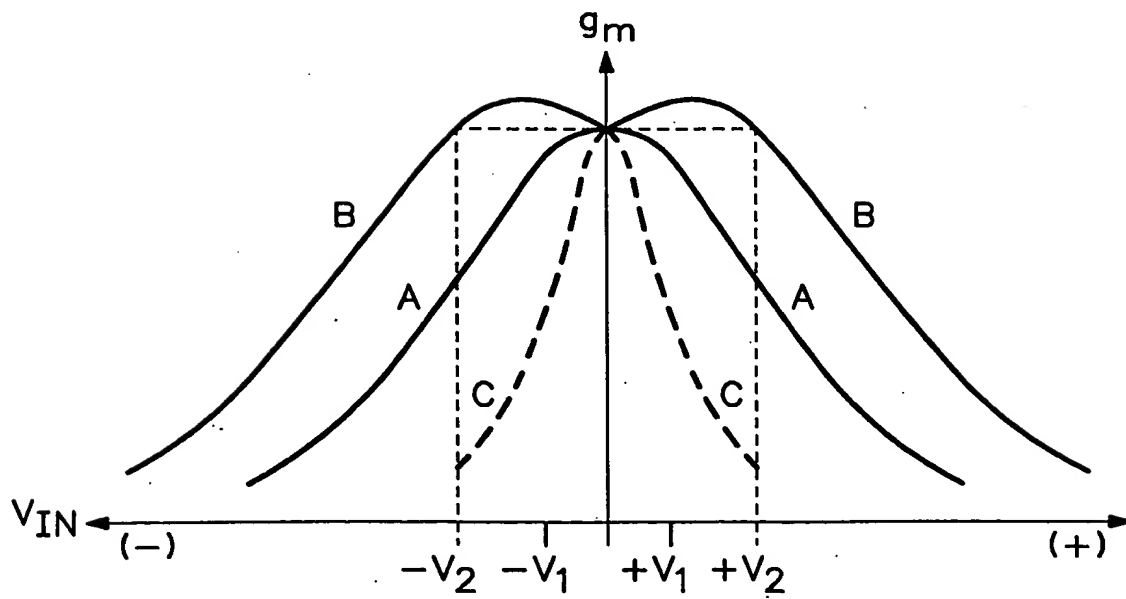


FIG.16

FIG. 17

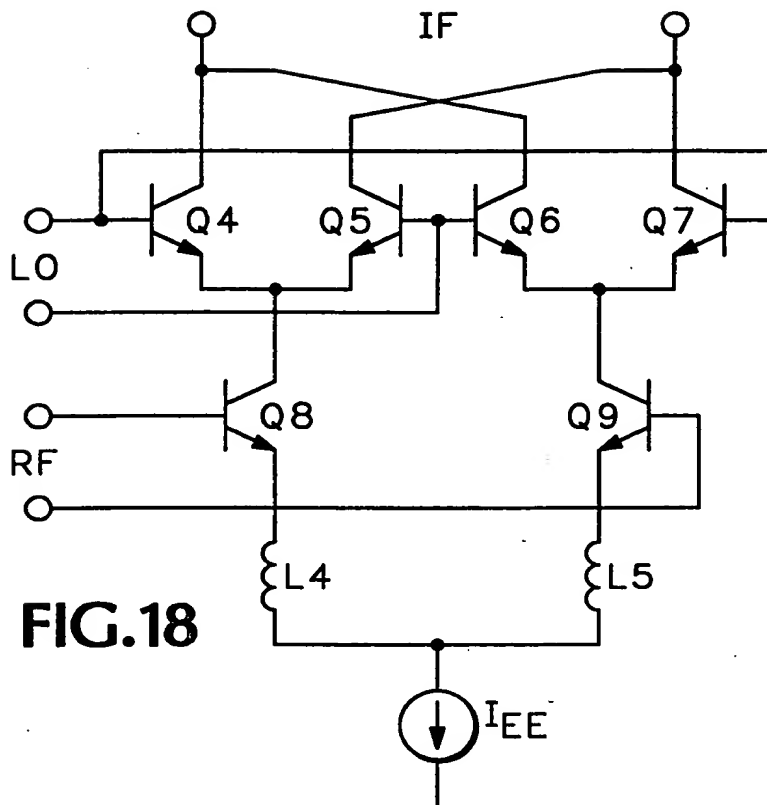


FIG.18

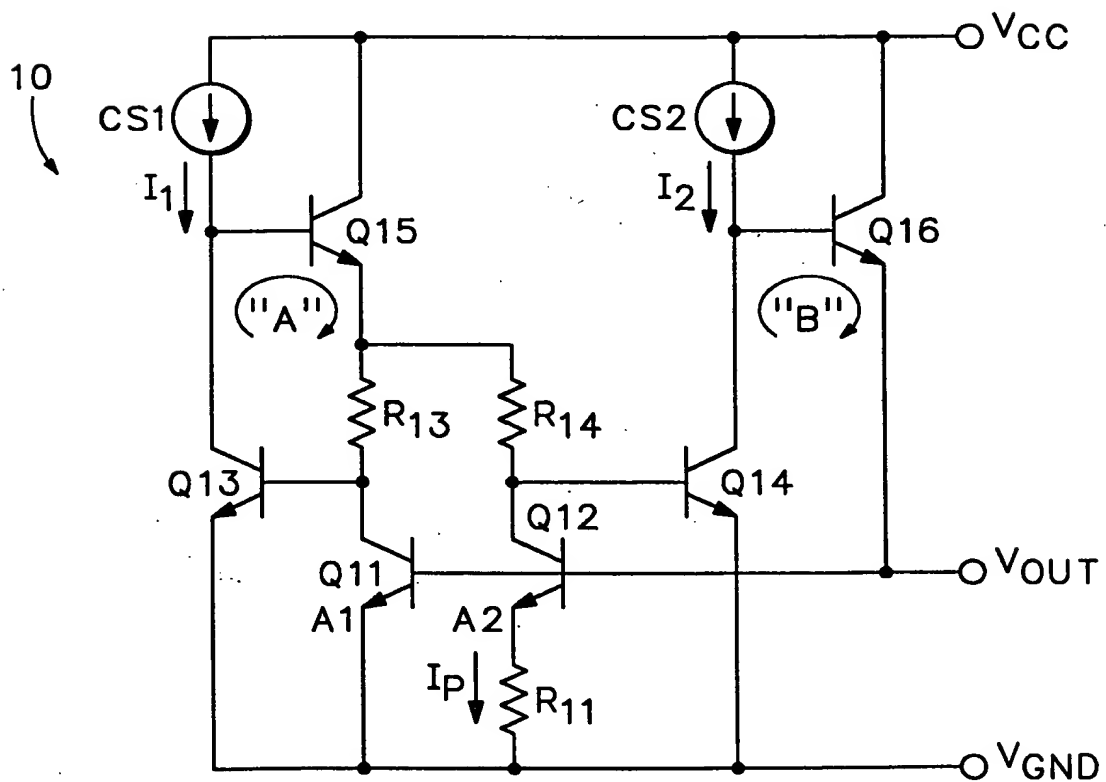


FIG.19
(PRIOR ART)

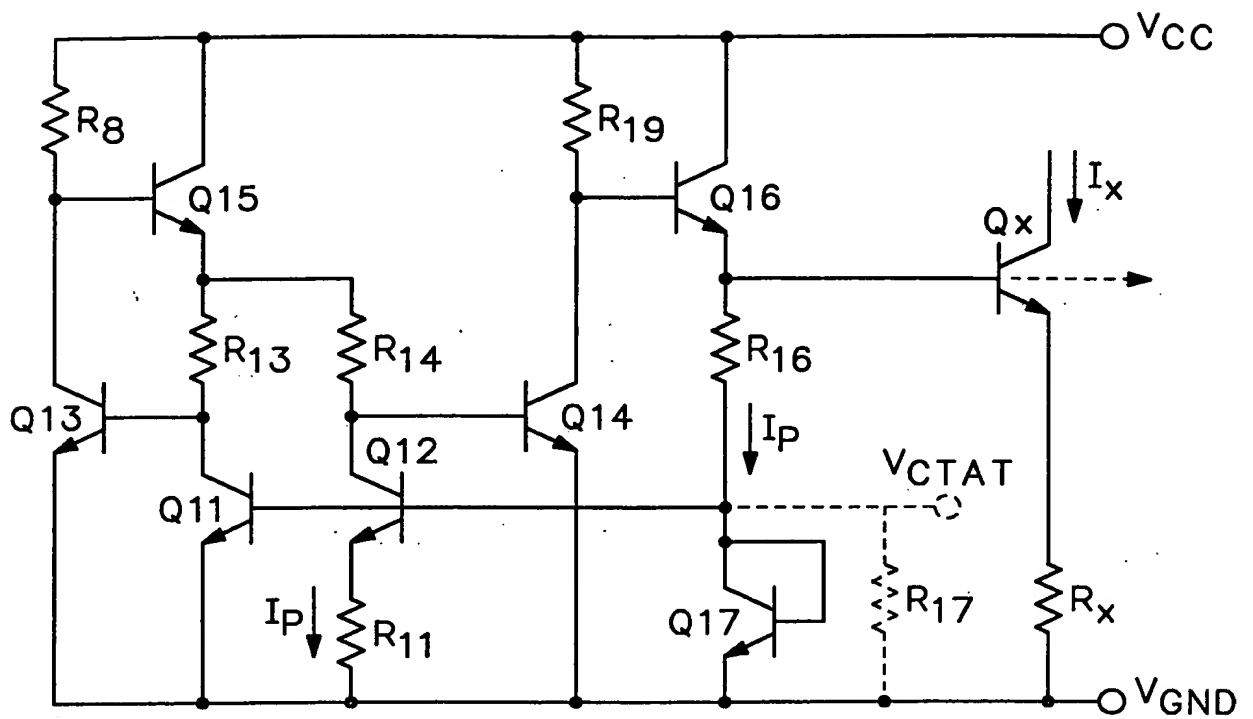


FIG. 20
(PRIOR ART)

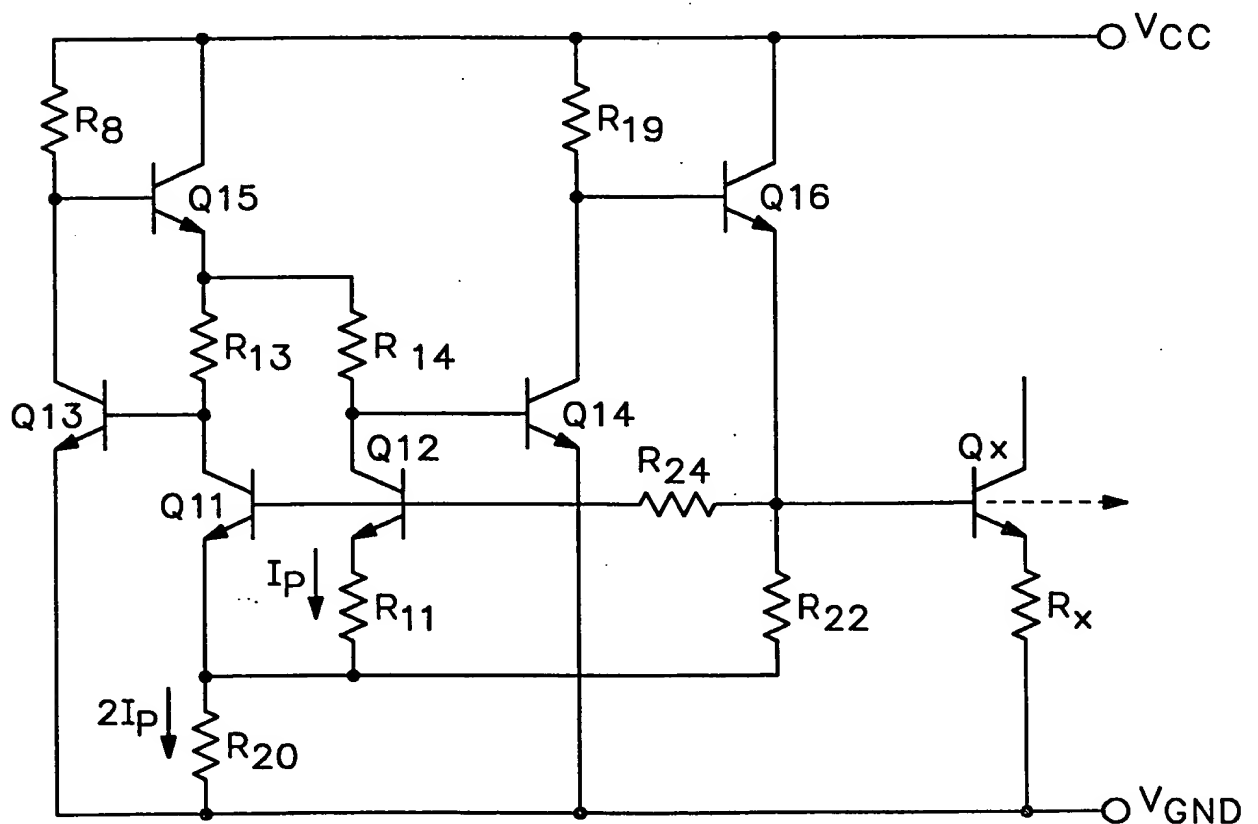


FIG. 21
(PRIOR ART)

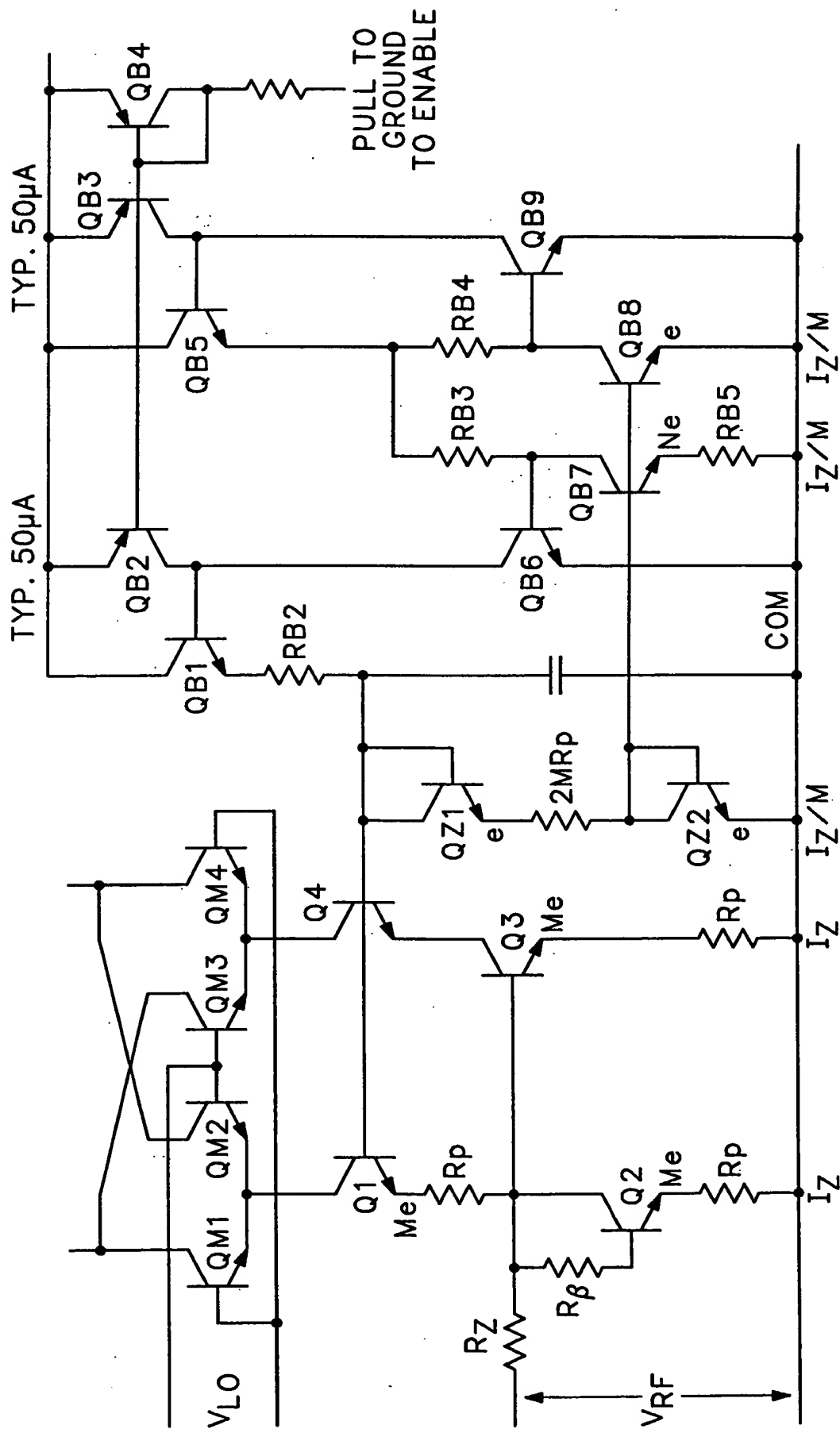


FIG. 22

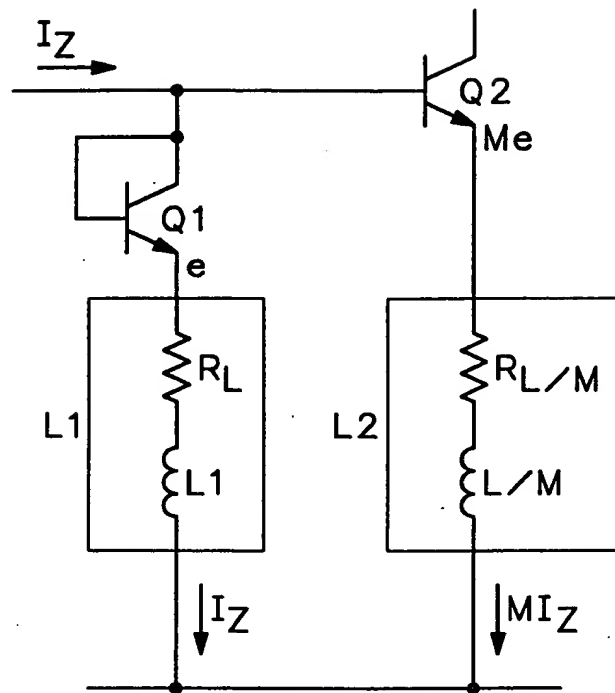


FIG.23

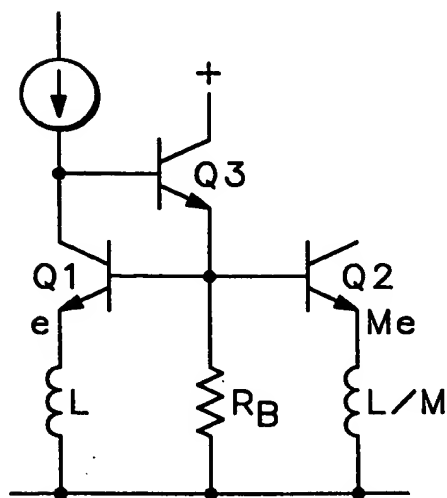


FIG.24

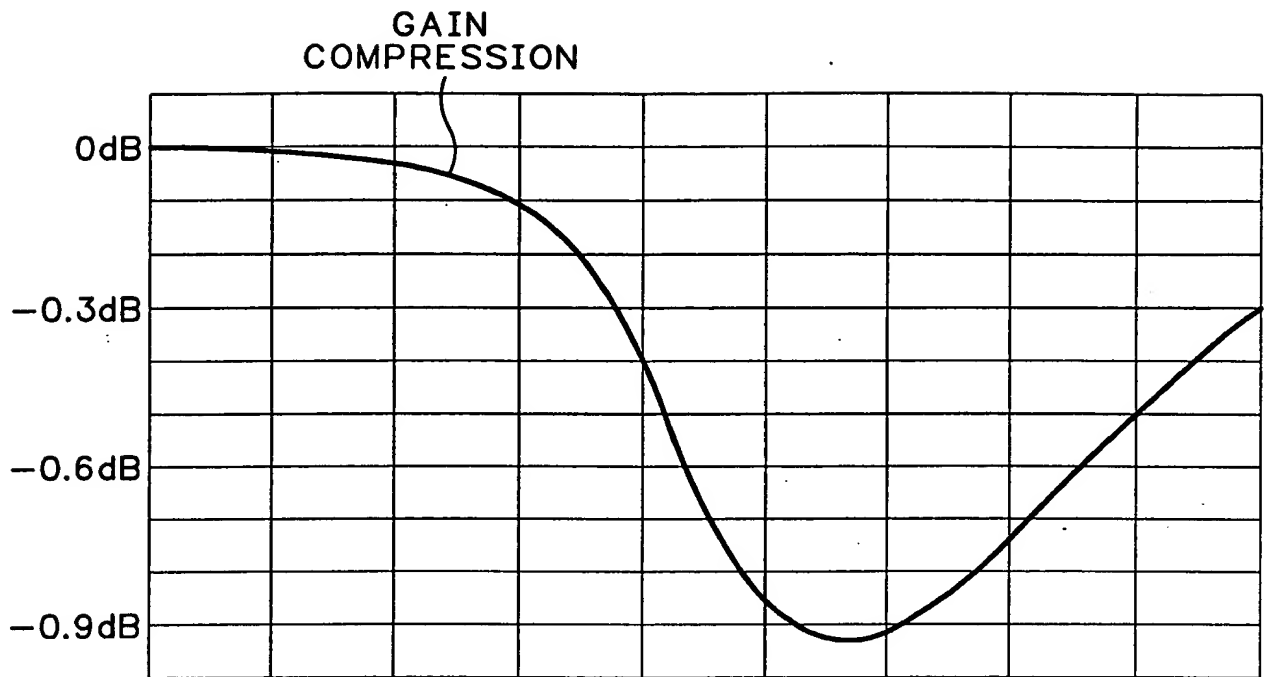


FIG.25A

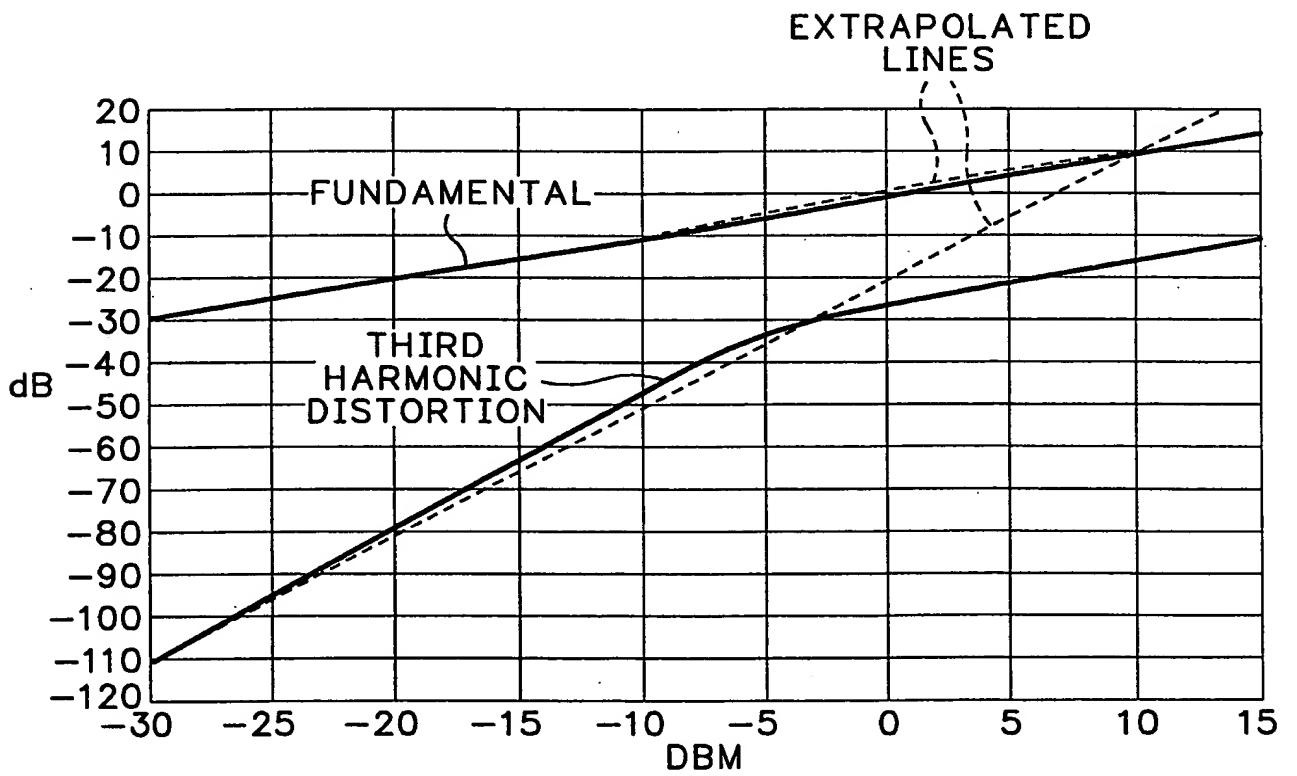


FIG.25B

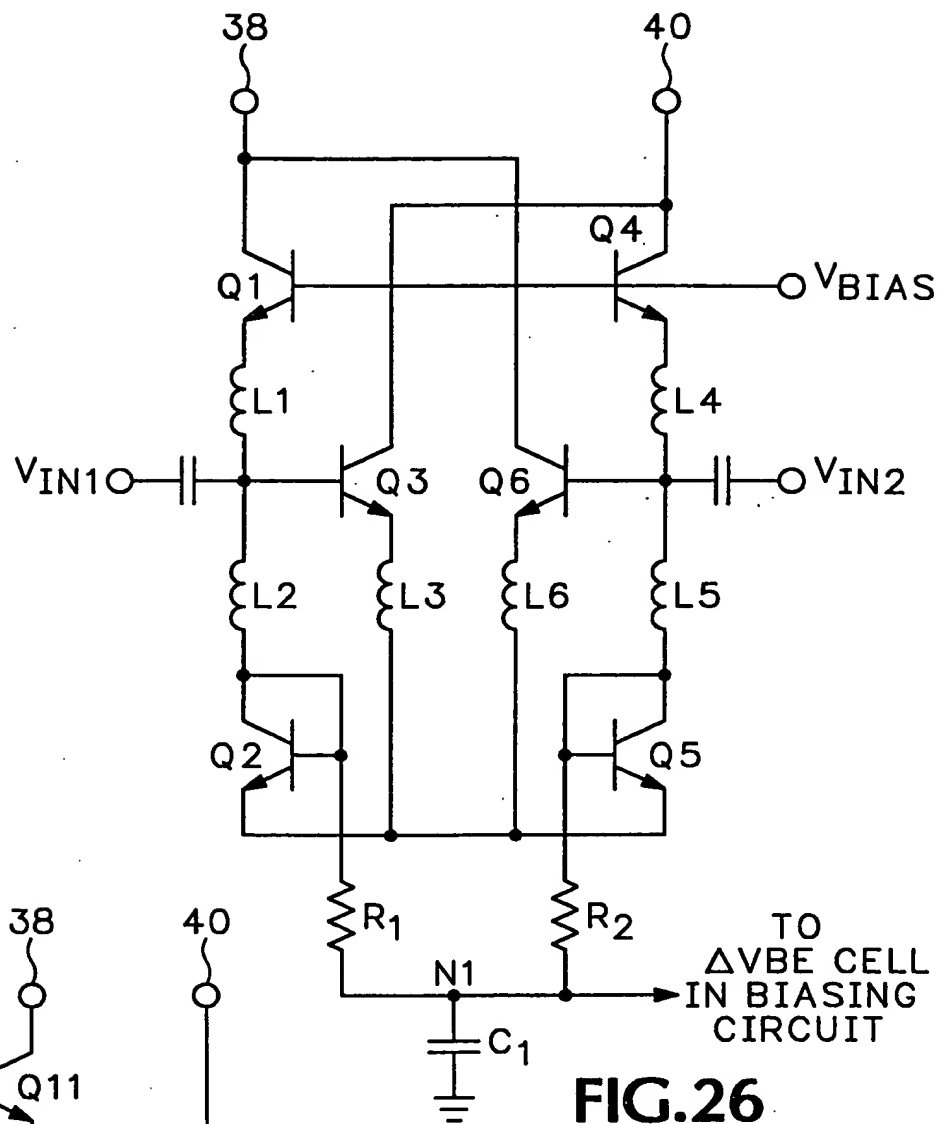


FIG. 26

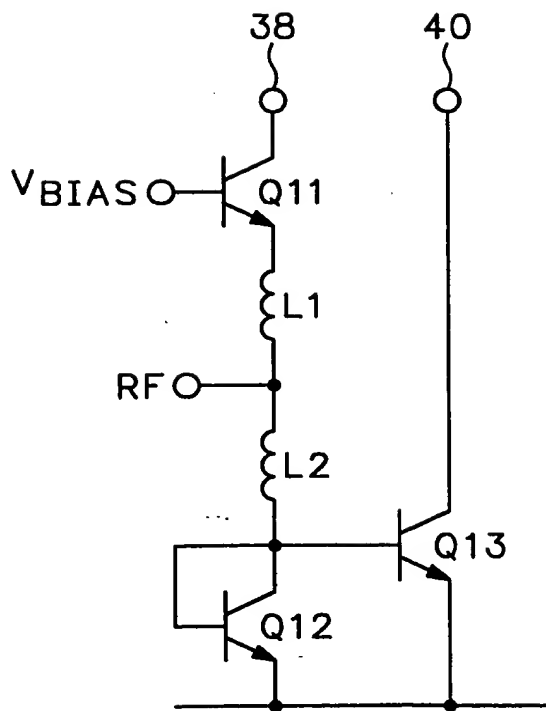


FIG. 27